

BRIDGE INSPECTION REPORT

Page 1 of 4

Status: Released
 CD Guid: 8d002c21-1370-40a5-ab7e-3268ca99e39b

Printed On: 6/2/2021
 Release Date: 5/5/2021

Agency: Washington State
 Program Mgr: Evan M Grimm

Br. No. 167/121W **SID** 0008114B **Br. Name** GREEN RIVER
Carrying SR 167 **Route On** 00167 **Mile Post** 19.04
Intersecting GREEN RIVER **Route Under** **Mile Post**

SIGNATURE ON FILE

Inspector's Signature FPP Cert # G0710 Cert Exp Date 5/11/2022

Co-Inspector's Signature RAB

Inspections Performed

Report Type	Inspection Type	Date	Freq	Hours	Inspector	Cert No	Co-Insp.
<u>Routine</u>		<u>4/10/2021</u>	<u>24</u>	<u>1.0</u>	<u>FPP</u>	<u>G0710</u>	<u>RAB</u>

8	<input type="checkbox"/> Alignment (1661)	52	<input type="checkbox"/> Operating Tons (1552)	1	<input type="checkbox"/> Bridge Rails (1684)	1	<input type="checkbox"/> No Utilities (2675)
6	<input type="checkbox"/> Deck Overall (1663)		<input type="checkbox"/> Op RF (1553)	1	<input type="checkbox"/> Transition (1685)	0.00	<input type="checkbox"/> Asphalt Depth (2610)
6	<input type="checkbox"/> Superstructure (1671)	31	<input type="checkbox"/> Inventory Tons (1555)	1	<input type="checkbox"/> Guardrails (1686)	1967	<input type="checkbox"/> Year Built (1332)
7	<input type="checkbox"/> Substructure (1676)		<input type="checkbox"/> Inv RF (1556)	1	<input type="checkbox"/> Terminals (1687)	1998	<input type="checkbox"/> Year Rebuilt (1336)
9	<input type="checkbox"/> Culvert (1678)	5	<input type="checkbox"/> Operating Level (1660)	34.0	<input type="checkbox"/> Bridge Rail Ht (2612)		
7	<input type="checkbox"/> Chan/Protection (1677)	A	<input type="checkbox"/> Open/Closed (1293)		<input type="checkbox"/> Design Curb Ht (2611)		
N	<input type="checkbox"/> Pier/Abut/Prot (1679)	6	<input type="checkbox"/> Structural Eval (1657)				
8	<input type="checkbox"/> Waterway (1662)	6	<input type="checkbox"/> Deck Geometry (1658)				
5	<input type="checkbox"/> Scour (1680)	9	<input type="checkbox"/> Underclearance (1659)				

NBIS Risk Category
Routine: Low Risk
Underwater: No Risk Category

Inspection Flags

<input type="checkbox"/> Soundings (2693)	<input type="checkbox"/> Measure Clearance (2694)	<input type="checkbox"/> Revise Rating (2688)	<input type="checkbox"/> Photos (2691)	<input type="checkbox"/> QA Flag (2695)
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BMS Elements

Element	Element Description	Total	Units	CS 1	CS 2	CS 3	CS 4
12	Concrete Deck	9369	SF	9365	0	4	0
26	Concrete Deck w/Coated Bars	3856	SF	3856	0	0	0
35	Concrete Deck Soffit	13225	SF	13224	0	1	0
36	Deck Rebar Cover Flag	13225	SF	13223	2	0	0
105	Concrete Box Girder	134	LF	112	18	4	0
115	Prestressed Concrete Girder	832	LF	828	0	4	0
200	Abutment Fill	2	EA	2	0	0	0
205	Concrete Pile/Column	10	EA	10	0	0	0
215	Concrete Abutment	116	LF	116	0	0	0
227	Concrete Submerged Pile/Column	4	EA	4	0	0	0
310	Elastomeric Bearing	16	EA	15	0	1	0
331	Concrete Bridge Railing	482	LF	482	0	0	0
361	Scour	2	EA	1	0	1	0
370	Seismic - Longitudinal Restrainer	10	EA	9	1	0	0
400	Asphalt Butt Joint Seal	110	LF	0	110	0	0
405	Compression Seal / Polymer Header	110	LF	0	0	110	0

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Notes	
0	Bridge is oriented south to north and carries SB traffic. Span 2A is the south box girder cantilever span. Span 2B is the prestressed girder drop-in span. Span 2C is the north box girder cantilever span. Span 3 has a pedestrian/bike path under it. Brush at the southwest corner impedes UBIT access. See photo #20. REPAIR #10006.
12	Deck is lightly rutted in wheel lines. Original deck section has numerous transverse cracks in Spans 1 and 3. Span 2 has a few transverse hairline cracks. Span 2A near the west fogline at the joint has approximately 2 sq. ft. total of exposed rebar due to lack of cover. Span 2B near the south end has a 10 ft. longitudinal crack in the right wheel line of the right lane. Span 2B lane 1 at midspan has a small pothole approximately 4" in diameter. Span 3 has a 6" diameter shallow spall between Lane 1 and 2.
26	The concrete deck with epoxy coated rebar includes the portion of the deck within 16 ft. of the east barrier.
35	Soffit has transverse leaching cracks, some are rust stained. Edges have vertical leaching cracks. Spans 2A and 2C soffit inside of the restrainer hatches have plywood formwork left in place at a few locations. Northwest side of Column 3B has 5" of exposed rebar due to lack of cover. Southwest side of Column 2B has 6" of exposed rebar due to lack of cover.
36	Deck has approximately 2 sq. ft. total of exposed rebar in Span 2. See element 12.
105	Webs have diagonal hairline cracks over the intermediate piers and at hinges, some are leaching. Span 1 bottom of box has approximately 2 sq. ft. total of patched areas. Span 1 bottom of box near Column 2B has 6" of exposed rebar due to lack of cover. Span 1 bottom of box near Column 2C has a 1 sq. ft. delamination/spall with 5" of exposed rebar due to lack of cover. Span 2 girder seats and stops at the south and north in-span hinges are integral with box girder spans. Some girder stops have corner spalls. Dirt and debris has built up around girder seats/stops and in joints above. See photo #13. REPAIR #10004. Span 2A bottom of box at the closure pour has some exposed rusty rebar ends/metal debris. Span 2C bottom of box has approximately 12 sq. ft. of patched areas scattered throughout. Span 2C bottom of box has a 12" x 6" delam under bearing 2E at the closure pour. Near Girder 2F east side of box has a longitudinal (somewhat heavy) leaching crack in the closure pour. Span 3 bottom of box has approximately 4 sq. ft. of patched areas.
115	Girder 2A bottom flange at the south end has a 6" x 2" x 1/2" deep spall with four exposed strand ends and one hoop. Girder 2B bottom flange near Bearing 2B has 10" of exposed transverse rebar. Girder 2C bottom flange at the north end has rusty exposed transverse rebar due to lack of cover. Girders 2E and 2F at base of webs near the north end have approximately 30" of exposed longitudinal rusty rebar due to lack of cover.
205	Columns 1A, 1B, and 1C as well as 4A, 4B, and 4C are visible at the abutments.
215	Abutments are backfilled and are hidden from view. Access to the north abutment is limited due to fencing for bike path.
227	Columns at Pier 3 have exposed casings. See photo #11.
310	Several bearings at the in-span hinges have shifted off the grout pads, up to 1". See photo #7. Bearing 2C south is bulging and distorted on the north side. See photo #8. Bearings 2B south and 2B north are both deformed in the vertical plane.
331	Bridge rails have vertical hairline cracks, some are leaching. West rail base has leaching with up to 2" long stalactites. West rail 24 ft. north of joint A in Span 2 has a 36" x 6" x 2" deep corner spall.
361	Green River flows east to west under Span 2. South bank has some riprap missing and has some sloughing under the bridge. See photo #16. North bank has light scattered riprap under the bridge. No signs of scour occurring. See photo #10.

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Notes (Continued)

- 370 There are five longitudinal restrainers at each in-span hinge. Full inspection requires access into the hatches in Spans 2A and 2C. During the 2017 inspection the locks for the west and center hatch in Span 2C were removed with bolt cutters due to corrosion preventing the locks from opening. South restrainer rod between Girders 2G and 2H needs to be reset to plan specifications. Rod does not protrude past nuts on north end and has extra length on south end. See photos #9 and #14. REPAIR #10001.
- 400 These joints are at the abutments have not been cut and sealed with poured rubber. Joints have 'D' cracking in the wheel lines. The approach roadway at the south joint is beginning to ravel. The approach roadway, lane 1 at the north joint is showing signs of settlement and beginning to ravel.
- 405 Joints at the Span 2 hinges (north and south) have been rebuilt with polymer headers. Span 2, south joint has several shallow 'D' spalls between 6" and 12" long on both sides of the joint. See photo #22. REPAIR #10007. North hinge joint at centerline of Lane 3 has two 6" x 3" x 1" deep 'D' spalls. REPAIR #10007.
- 1677 Banks have soft silts with heavy vegetation up and downstream, some undercutting of vegetation in places. See element 361. See photos #17 and #18.
- 1680 A major channel migration would be required for the calculated scour depth to occur. Piers 2 and 3 have 2'-6" thick seals and 4'-0" thick pile caps.
- 2675 There are two 4" diameter conduits suspended from the east overhang.

Repairs

Repair No	Pr	R	Repair Descriptions	BMS	Noted	Maint	Verified
10001	2	B	Reset south longitudinal restrainer between Girders 2G and 2H total gap to plan specifications. See Sheet #471 on BEIST. Remove outside nut, typical each end. Tap remaining nut and install cone-point set screw to secure the nut in the desired location. (4/13/2013 - Repair rewritten. TKK/RAA)	370	7/31/2005		
10004	2	B	Clean/remove debris from around the girder seats/stops and between the joints above at Span 2 south and north in-span hinges. Debris impedes inspection, remove before next UBIT inspection in 2025. (4/10/2021) - Repair rewritten. FPP/RAB	105	4/4/2009		
10006	1	B	Brush at the southwest corner impedes UBIT access. Remove brush before 2025 UBIT inspection. (4/10/2021) - Repair rewritten. FPP/RAB	0	4/29/2017		
10007	1	B	Remove loose and delaminated concrete from spalls/broken patches, clean reinforcement and coat with epoxy then patch with an approved material.	405	4/9/2019		

Inspections Performed and Resources Required

Report Type		Date	Freq	Hrs	Insp	CertNo	Coinsp	Note	
Routine		4/10/2021	24	1.0	FPP	G0710	RAB	UBIT is required on a 48 month frequency to inspect Span 2 at hinges, bearings, seismic restrainers and to access hatches.	
Resources	Hours	Min	Pref	Max	Freq	Date	Need Date	Override	Notes
SNDG					72	4/29/2017	4/29/2023		
UBIT	1.50	62	62	62	48	4/10/2021	4/10/2025		UB62 is required for 58 ft. out-to-out width.
Attenuator	2.00	ST	ST	ST					Attenuator was used for protection of the UBIT and during traffic control setup and takedown.

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Resources	Hours	Min	Pref	Max	Freq Date	Need Date	Override	Notes
Flagging	2.00	ST	ST	ST				Contact NWR at 425-339-1778 to arrange for traffic control.
Keys								Key NM-70 needed for restrainer hatches in soffit (BPO keybox sets #95 to #98). Needed during UBIT inspection.
Scheduling Restrictions		TRFC	TRFC	TRFC				2021 Inspection work window: Weekends 6:00am - 7:30am.

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
NBI STRUCTURE INVENTORY AND APPRAISAL REPORT
(ENGLISH UNITS)

CD Date: 4/28/2021 Printed on: 6/2/2021
CD Guid: 8d002c21-1370-40a5-ab7e-3268ca99e39b

IDENTIFICATION				WSBIS DATA			
(1) STATE NAME - WASHINGTON			530	BRIDGE NUMBER			167/121W
(8) STRUCTURE NUMBER			# 0008114B0000000	BRIDGE NAME			GREEN RIVER
(5) INVENTORY ROUTE (ON/UNDER) - On			1 3 1 00167	CUSTODIAN			Washington State
STATE ROUTE MILEPOST			19.04	CROSSING DESC			GREEN RIVER
(2) HIGHWAY AGENCY DISTRICT - NW Region			01	MAIN LISTING FLAG			M
(3) COUNTY CODE 33 - King County		(4) PLACE CODE	00000	SUFFICIENCY RATING		90.39	Not SD or FO
(6) FEATURES INTERSECTED			GREEN RIVER	CLASSIFICATION			
(7) FACILITY CARRIED			SR 167	(112) NBIS BRIDGE LENGTH			Y
(9) LOCATION			4.3 N JCT SR 18	(104) HIGHWAY SYSTEM - On the NHS			1
(12) BASE HIGHWAY NETWORK - Part of network			1	(26) FUNCTIONAL CLASS - Prin Arterial - Other Fwy or Expwy			12
(13) LRS INV ROUTE AND SUB ROUTE			16700	(100) DEFENSE HIGHWAY - Not a STRAHNET route			0
(11) LRS MILEPOST			19.04	(101) PARALLEL STRUCTURE - Left Hand			L
(16) LATITUDE		47 Deg 22 Min 10.90 Sec		(102) DIRECTION OF TRAFFIC - 1-way traffic			1
(17) LONGITUDE		122 Deg 14 Min 40.50 Sec		(103) TEMPORARY STRUCTURE - Not Applicable			
(98A) BORDER BR. - Not a border bridge (98B) (99) BORDER BR. SID - Not a border bridge				(105) FEDERAL LANDS HIGHWAY - Not Applicable			0
STRUCTURE TYPE AND MATERIAL				(110) DESIGNATED NATIONAL NETWORK - Part of network			1
(43) STRUCTURE TYPE MAIN: MATERIAL - Prestressed concrete				(20) TOLL - Non-toll structure			3
DESIGN - Stringer/multi-beam			502	(21) MAINTENANCE - State Highway Agency			01
(44) STRUCTURE TYPE APPR: MATERIAL - Concrete continuous				(22) OWNER - Washington State			1
DESIGN - Box beam/girder - multiple			205	(37) HISTORICAL SIGNIFICANCE - Not eligible			5
(45) NO. OF SPANS IN MAIN UNIT			1	CONDITION			
(46) NO. OF APPROACH SPANS			2	(58) DECK			6
(107) DECK STRUCTURE TYPE - Conc. CIP			1	(59) SUPERSTRUCTURE			6
(108) WEARING SURFACE / PROTECTIVE SYSTEM:				(60) SUBSTRUCTURE			7
(A) TYPE OF WEARING SURFACE - Monolithic concrete			1	(61) CHANNEL AND CHANNEL PROTECTION			7
(B) TYPE OF MEMBRANE - None			0	(62) CULVERTS			N
(C) TYPE OF DECK PROTECTION - None			0	LOAD RATING AND POSTING			
AGE AND SERVICE				(31) DESIGN LOAD - HS 20+Mod			6
(27) YEAR BUILT			1967	(63) OPER RATING METHOD - Ld Factor (LFR) tons HS20			1
(106) YEAR RECONSTRUCTED			1998	(64) OPERATING RATING			52 T
(42) TYPE OF SERVICE ON - Highway			1	(65) INV RATING METHOD - Ld Factor (LFR) tons HS20			1
UNDER - Waterway			5	(66) INVENTORY RATING			31 T
(28) LANES: ON STRUCTURE 3		UNDER STRUCTURE	0	(70) BRIDGE POSTING - Equal or above legal loads			5
(29) AVERAGE DAILY TRAFFIC			69129	(41) STRUCT OPEN, POSTED, CLOSED - Open, no restrictions			A
(30) YEAR OF ADT 2019		(109) TRUCK ADT	10%	APPRAISAL			
(19) BYPASS, DETOUR LENGTH			1 mi	(67) STRUCTURAL EVALUATION			6
GEOMETRIC DATA				(68) DECK GEOMETRY			6
(48) LENGTH OF MAXIMUM SPAN			150 ft	(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL			N
(49) STRUCTURE LENGTH			241 ft	(71) WATERWAY ADEQUACY			8
(50) CURB OR SIDEWALK: LEFT 0.0 ft		RIGHT	0.0 ft	(72) APPROACH ROADWAY ALIGNMENT			8
(51) BRIDGE ROADWAY WIDTH CURB TO CURB			54.0 ft	(36) TRAFFIC SAFETY FEATURES			1111
(52) DECK WIDTH OUT TO OUT			57.2 ft	(113) SCOUR CRITICAL BRIDGE			5
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)			54 ft	PROPOSED IMPROVEMENTS			
(33) BRIDGE MEDIAN - No median			0	(75) TYPE OF WORK -			351
(34) SKEW 8 Deg		(35) STRUCTURE FLARED	No 0	(76) LENGTH OF STRUCTURE IMPROVEMENT			241 ft
(10) INVENTORY ROUTE MIN VERT CLEAR			99 ft 99 in	(94) BRIDGE IMPROVEMENT COST			\$2,699,000
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR			54 ft 00 in	(95) ROADWAY IMPROVEMENT COST			\$540,000
(53) MIN VERT CLEAR OVER BRIDGE RDW			99 ft 99 in	(96) TOTAL PROJECT COST			\$5,398,000
(54) MIN VERT UNDERCLEAR			0 ft 00 in N	(97) YEAR OF IMPROVEMENT COST ESTIMATE			2014
(55) MIN LAT UNDERCLEAR RT			0.0 ft N	(114) FUTURE ADT			97610
(56) MIN LAT UNDERCLEAR LT			0.0 ft	(115) YEAR OF FUTURE ADT			2039
NAVIGATION DATA				INSPECTIONS			
(38) NAVIGATION CONTROL - No nav control			0	(90) INSPECTION DATE 04/21		(91) FREQUENCY	24 MO
(111) PIER PROTECTION - Not Applicable				(92) CRITICAL FEATURE INSPECTION:		(93) CFI DATE	
(39) NAVIGATION VERTICAL CLEARANCE			000 ft	(A) FRACTURE CRIT DETAIL - NO -		Month	(A) __/__/__
(116) VERT-LIFT BRIDGE NAV MIN VERT CLR				(B) UNDERWATER INSP - NO -		Month	(B) __/__/__
(40) NAVIGATION HORIZONTAL CLR			0000 ft	(C) OTHER SPECIAL INSP - NO -		Month	(C) __/__/__